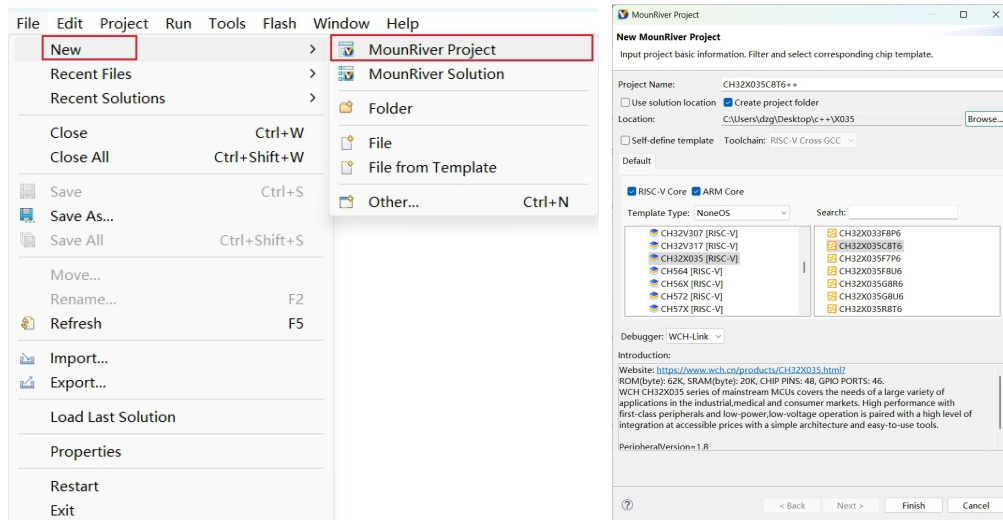


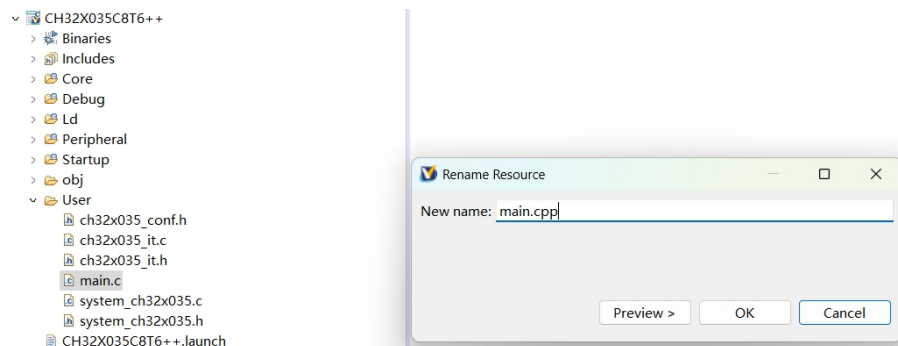
## Create a C++ project based on MRS

Create a C++ project based on MRS . First build a main.c project , and then modifying the configuration so that the .cpp file calls the C++ compiler to compile it. The detailed steps are as follows.

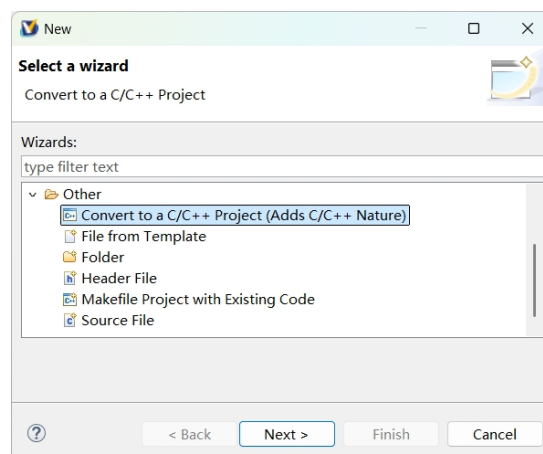
1. Normally create a project based on .C



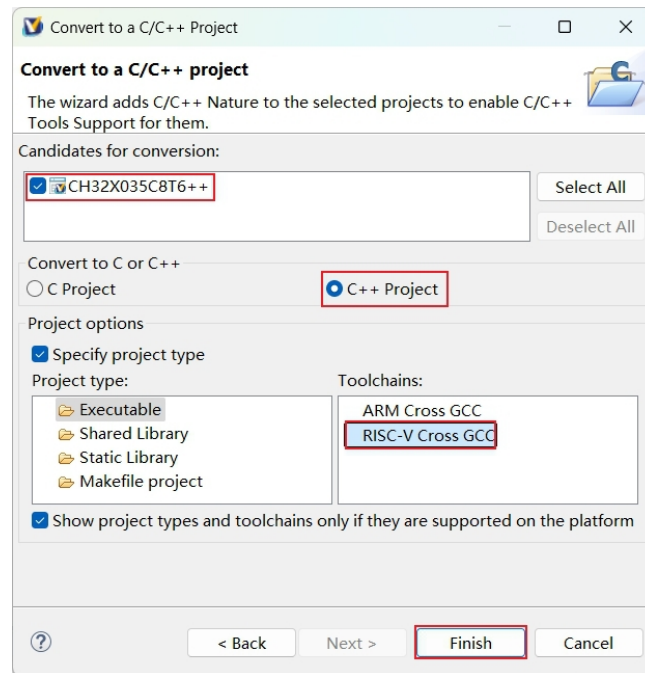
2. Make the main.c file into main.cpp by renaming it. Of course, you can also add a new .cpp by adding a File.



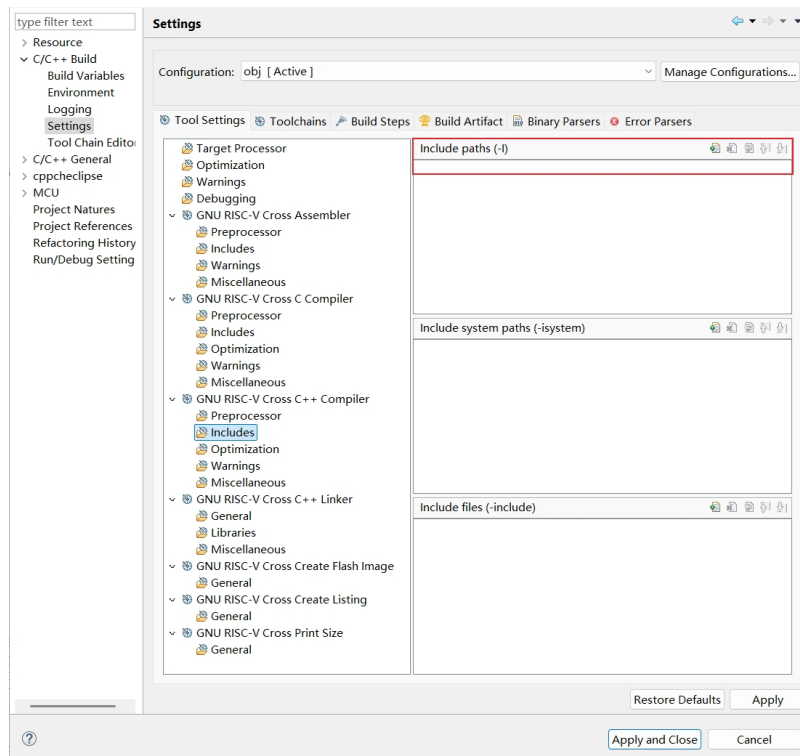
3. Right-click the project, new->other, select it according to the following figure, and then click Next.



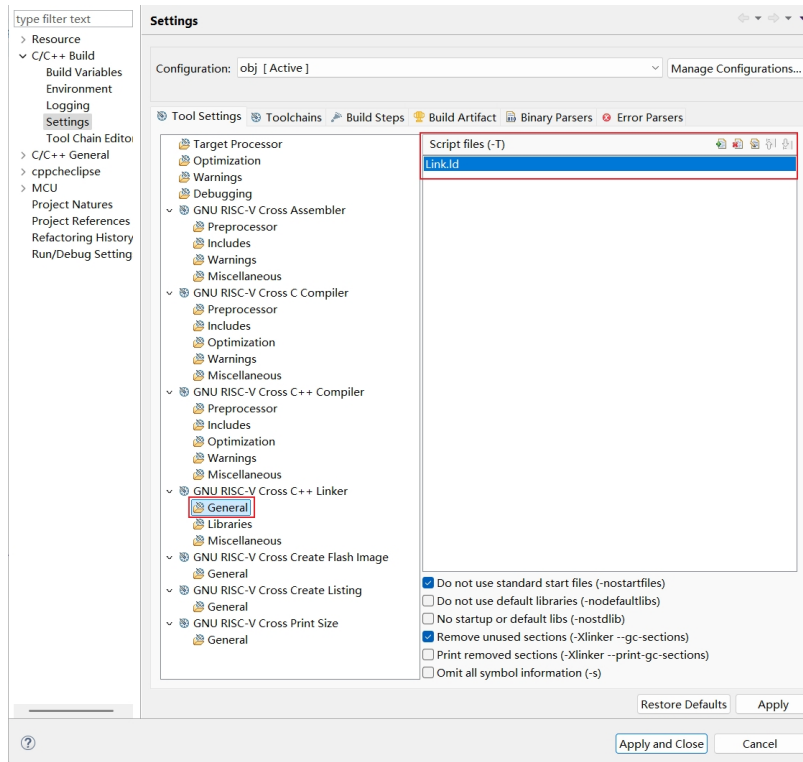
4. Configure as shown below



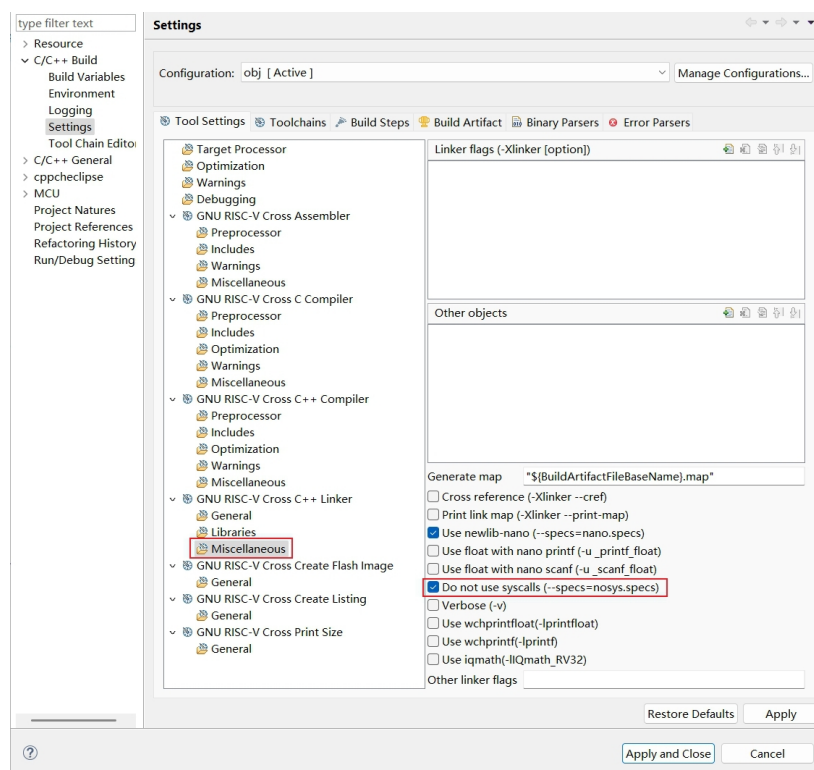
5. The original settings will become the default and need to be added again.



Add the header file path in the above image.



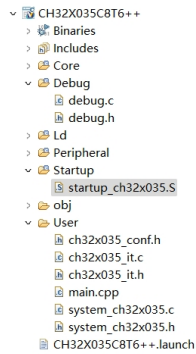
Add the link script path in the above figure.



The above figure uses the default function, if the original project uses the library, the library also needs to be added again after conversion.

6. Add the C++ initialization function before the main function is called in the startup file.

```
la a0, __libc_fini_array
call atexit
call __libc_init_array
```



```
207:
208 /* Configure pipelining and instruction prediction
209 li t0, 0x1f
210 csrwr 0x8c0, t0
211 /* Enable interrupt nesting and hardware stack */
212 li t0, 0x3
213 csrwr 0x804, t0
214 /* Enable global interrupt and configure privilege
215 li t0, 0x88
216 csrwr mstatus, t0
217 /* Configure the interrupt vector table recognition
218 la t0, _vector_base
219 ori t0, t0, 3
220 csrwr mtvec, t0
221
222 la a0, __libc_fini_array
223 call atexit
224 call __libc_init_array
225
226 jal SystemInit
227 la t0, main
228 csrwr mepc, t0
229 mret
230
```

7. Two more empty functions are needed and must be declared in files with a .c suffix.

```
void _fini() {}
void _init() {}
```



```
232 *
233 * @brief Change the spatial position of data segment.
234 *
235 * @return size - Data length
236 */
237 @__attribute__((used))
238 void *_sbrk(ptrdiff_t incr)
239 {
240     extern char _end[];
241     extern char _heap_end[];
242     static char *curbrk = _end;
243
244     if ((curbrk + incr < _end) || (curbrk + incr > _heap_end))
245         return NULL - 1;
246
247     curbrk += incr;
248     return curbrk - incr;
249 }
250
251 void _fini() {}
252 void _init() {}
253
```

8. At this point the project file environment has been configured, the files with the .cpp suffix will call the C++ compiler to compile.